

L 3021-66 EWT(1) GW

ACCESSION NR: AP5026873

CZ/0023/65/002/001/0035/0052

15
13
B

AUTHOR: Beranek, Bratislav

TITLE: Quantitative interpretation of fields derived by approximate transformations of gravity anomalies 12

SOURCE: Studia geophysica et geodastica, v.9, no. 1, 1965, 35-52

TOPIC TAGS: geodesy, geology

Abstract [English article, author's Russian summary]: The quantitative interpretation is solved of fields derived by approximate transformations G_{trans} of gravity anomalies g . The values of the residual anomalies g_{res} and of the higher derivatives g_z and g_{zx} are used as transformed quantities. The magnitude of the transformed quantities is studied in the peak of the anomalies G_{trans} as a function of the magnitude of the region S for which the transformed value is defined. The transformed function can be expanded into the product of two functions G and f , where only the function f is dependent on the magnitude of the region S . Using a bilogarithmic scale, the depth h and the parameters p_1, p_2 defining the shape of the body can be found from a comparison of the theoretical curves $f(t, a)$ and the calculated curves $G_{trans}(r)$. The problem of applying the method to simple forms of disturbing bodies (sphere, Card 1/2

L 3021-66

ACCESSION NR: AP5026873

vertical mass segment, ellipsoid of rotation with vertical axis, horizontal circular cylinder, mass horizontal band, mass vertical band) is solved. Several types of theoretical curves are presented for the practical application of the method. "In conclusion, the author would like to thank V. Vysokil for valuable remarks which greatly helped to improve the whole paper." Orig. art. has 15 figures, 13 formulas, and 1 table. 2

ASSOCIATION: CND, national enterprise, Geophysical Works, Brno

SUBMITTED: 31Mar64

ENCL: 00

SUB CODE: ES

NO REF SOV: 000

OTHER: 000

JPRS

Card 2/2 msl

L 36115-66

ACC NR: AT6016647

(N)

SOURCE CODE: CZ/2512/64/012/000/0199/0224

AUTHORS: Beranek, Bretislav; Zouunkova, Milada

ORG: CND, National Enterprise, Geophysical Works, Brno

TITLE: Borehole refraction method

SOURCE: Ceskoslovenska akademie ved. Geofysikalni ustav. Geofysikalni sbornik, v. 12, 1964. Prague, 1965. Prace, no. 196-214, 199-224

TOPIC TAGS: seismic prospecting, refracted wave, seismic logging
borehole logging, *ACOUSTIC REFRACTION, SEISMIC WAVE*

ABSTRACT: The paper presents a method of interpreting measurements using a geophone located in a borehole below the refraction interface for recording waves excited on the surface. For the sake of brevity, this was called borehole refraction method. The paper deals primarily with numerical methods permitting the coordinates of the corresponding refraction point on the interface to be calculated from the field of ray times. Both the direct and the inverse problem were solved for a plane interface with inclination ϕ , as well as some methods of calculating the relative elevations with respect to the comparative horizontal

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ACC NR: AT60166h

level. These methods give only approximate results. The calculation of the depth corrections and corrections for the displacement of the point (vector displacement) is intended primarily for relatively small elevations from the comparative level. As exemplified on models in the paper, even when the elevations are large, relatively satisfactory results are obtained by using relations $p = (z_0 - \Delta z)v_1 / \sqrt{(\bar{v}^2 - v_1^2)}$ or $(\Delta z = \Delta t \cdot K)$. These methods are intended for quick evaluation of the results during the actual work so that the measurements can be supplemented where required. For the final treatment of the results, a numerical method is elaborated which permits the calculation of the coordinates of the refraction point if the ray time, the values of the apparent velocity, and the slope of the displacement vector (normal to isochrone) are known. The appropriate values are best obtained from the ray-time field by using a square network of points. The method is analogous to the graphical method of solving this problem according to L. M. Gardner: [Seismograph Determination of Salt-Dome Boundary Deep on the Dome Flank. Geophysics, 14 (1949), 29]. The advantage of this method is that it eliminates the necessity for three-dimensionality. A disadvantage is that in the first medium the velocity is considered to be constant and not variable with depth z . The three-dimensional solution by the graphical method using A. W. Musgrave, V. C. Wodley, H. Gray: [Outlining Salt Masses by Refraction Methods. Geophysics, 25 (1960), 141], permits

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L 36115-66

ACC NR: AT6016647

the use of wavefront charts which consider given velocity conditions. When interpreting the travel-time curves constructed from measured ray times, we consider only the first arrival. The type of wave recorded is not known exactly. The inverse problem will be made more difficult, particularly by the diffracted waves appearing in the first arrivals. The effect of the irregular configuration of the interface on the type of travel-time curves of the different waves was studied on several models representing a horst and a graben. It is clear from the inverse problems that the occurrence of diffracted rays greatly interferes with continuous study of the interface. The data on diffracted waves obtained from the models studied can then be applied in real measurements. For a more detailed study it would be more advantageous to carry out laboratory model measurements for different types of interface configuration. This would permit a study not only of the kinematic but also of the dynamic characteristics for distinguishing different types of waves. Better interpretation would contribute to the study of later wave arrivals. Orig. art. has: 15 figures and 12 formulas. [Author's abstract] [KS]

SUB CODE: 08/ SUBM DATE: 07Apr64/ OTH REF: 002/ SOV REF: 002

Card 3/3 *ML*

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Corrosion. Corrosion Protection.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67810.

Author : Barton K., Beranek E., Bartonova S.

Inst : Not given.

Title : Investigation of Corrosion. XV. Mechanism of Formation of Corrosion Products on Steel and Zinc in Humid Atmosphere Containing Small Quantities of HCl Vapor.

Orig Pub: Chem. listy, 1957, No 10, 1787-1790.

Abstract: The rate of corrosion (K) of steel and zinc in humid atmosphere containing acid vapors depends on numerous factors of which the following ones

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CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Corrosion, Corrosion Protection.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67810.

Abstract: are important: absorption of acid gases by water, hydrolytic type of a reaction that yields products of K, the nature of salt products of K and others. The authors investigated kinetics of K for Fe and Zn in an atmosphere with relative humidity of 99.86 and 75% containing HCl of 1×10^{-4} and $2 \times 10^{-3}\%$. The results showed that with Zn, centers of K were not found, however, with Fe they can be detected after 17 hours of exposure. The K-vs time curves indicate that corrosion starts only after a film of oxides is destroyed which occurs after approx. 20 hours. Increase in the rate of K is attributed to the formation of hygroscopical products of K. In the case of Fe it is characterized by an increased number of centers of K. While in the case

Card 2/3

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Corrosion. Corrosion Protection.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67810

Abstract: of Zn the rate of K decreases due to the formation of chlorides of Zn, whose composition changes as a function of time. Corrosion of Zn takes place at higher values of pH than those corresponding to the equilibrium concentration for vapor pressure of HCl in an atmosphere. The above was responsible for buffering of the products of K. For Part XLV see Ref Zhur-Khimiya, 1958, 25,466.

Card 3/3

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and
Their Application. Corrosion. Protection
From Corrosion.

H-4

Abs Jour : RfZhur - Khimiya, No 8, 1958, 25165

Author : X. Barton K., ~~Baranek E.~~
XI. Baranek E., Barton K., Smrcek K., Sekerka I.
XII. Sekerka I., Vanicek O.
XIII. Sekerka I., Smrcek K.

Inst : -

Title : Corrosion Studies. X. Mechanism of Corrosion of Metals
in Humid Atmosphere Contaminated with Sulfur Dioxide.
XI. Effect of Light on Corrosion of Zinc and Iron Under
Atmospheric Conditions. XII. Effect of Stress on Rate
of Dissolution of Metals. XIII. Rate of Corrosion of
Zinc in Solutions of Chlorides and Resulting Corrosion
Products.

Orig Pub : Sb. chekhol. khim. rabot, 1957, 22, No 2, 356-367, 368-
378; No 3, 705-711, 712-720; Transl.-Chem. listy, 1956,
50, No 9, 1388-1389; No 10, 1563-1572; No 11, 1683-1688,
1689-1695. Abstract: See RZhKhim, 1957, 59687.

Card 1/1

BERANEK, E.

CZECHOSLOVAKIA / Physical Chemistry. Solutions, Theory
of Acids and Bases. B

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60319.

Author : Frantisek Cuta, Eduard Beranek, Jan Pisecky.

Inst : "

Title : Determination of Thermodynamic Constant of Sulfurous Acid Dissociation Bases on Potentiometric and Spectrophotometric Measurements.

Orig Pub: Chem. listy, 1957, 51, No 9, 1614-1617.

Abstract: The magnitude of the second constant of sulfurous acid dissociation was determined based on the titration curves, as well as spectrophotometrically. The spectrophotometric studies were carried out in

Card 1/2 Vysoka skola chem-technol., Prague.

BERANEK, EDUARD

CZECHOSLOVAKIA/Optics - Spectroscopy

K-7

Abs Jour : Ref Zhur - Fizika, No 6, 1958, No 14321

Author : Ota Frantisek, Beranek Eduard

Inst : Not Given

Title : Spectrophotometry of Mixtures of Trinitrobenzol with Sulfates, Sulfides, and Cyanides

Orig Pub : Chem. listy, 1957, 51, No 9, 1662-1676

Abstract : The extinction curves were measured for mixtures of trinitrobenzol with ions SH_3^- , SH^- and CN^- . The limiting values of pH, at which the trinitrobenzol reacts to changes in the concentration of the above anions are determined.

Card : 1/1

COUNTRY : POLAND
 CATEGORY : Organic Chemistry. General and Theoretical
 Problems of Organic Chemistry
 ANN. JOUR. : REXHim., No. 23 1959, No. 82183
 AUTHOR : Gutta, P.; Buranek, E.; Pizocky, J.
 TITLE : Spectrophotometric Investigation of Products
 of the Reaction of Sym. Trinitrobenzol with
 Hydroxides, Sulfites, Sulfides and Cyanides
 CIT. PUB. : Chem. analit., 1958, 3, No 3-4, 281-289
 ABSTRACT : Sym. trinitrobenzol (I) produces a red color
 with the ions OH^- , SO_3^{2-} and SH^- , and with
 CN^- a violet one reaching maximum at pH 9.
 The maximum of absorption increases up to a
 concentration of 0.5 n. NaOH, and with an in-
 crease of concentration up to 9 n. NaOH, dis-
 coloration occurs. The anion and range of
 values of pH at which coloring takes place,
 the maximum of absorption of acids obtained
 from the addition of the anion to I in mp,

CARD: 1/2

G-5

COUNTRY :
CATEGORY :

ABST. JOUR. : RZKhim., No. 23 1959, No. 32188

AUTHOR :
TITLE :
TEXT :

ORIG. PUB. :

ABSTRACT
words

and the maximum of absorption of I are given. OH^- , 10.5-12.3, kmol^{-1} , 350; OH^- , 0.2, 100, kmol^{-1} ; SO_3^{2-} , 7-10, 100, 120; SO_3^{2-} , 6-8, 100-120, ... The dissociation constant $k = (1.3 \pm 0.2) \cdot 10^{-7}$ at pH 8 for the reaction $(1\text{-SO}_3^{2-}) \rightarrow \text{I} + \text{SO}_3^{2-}$ was calculated. The sensitivity of the reaction of I with SO_3^{2-} at pH 8 constant is 1: 200,000. The dissociation constant of I, $(1.3 \pm 0.2) \cdot 10^{-7}$, was determined. The absorption spectra of I with the above-mentioned anions are given.-- S. Ioffe

1/2:

2/2

DERANEK, E.

Distr: 1E2c

✓ Corrosion studies. XVIII. Processes governing the kinetics of dissolving of metal. Ivan Scherba, Karel Šurtek, Jan Vorlíček, and Eduard Beránek (Vysokomý střední odborný materiál G. V. KREMLOVA, Prague). Chem. Abstr. 1100-11(1968); cf. C.A.B. 19611c. — The dissolving of metals in acids or bases may be controlled by 2 steps according to the concn.: up to the concn. 0.1N the rate is controlled by the diffusion of H^+ ions to the metal surface; at concns. greater than 0.1N the rate controlling step is the discharging of H^+ ions, and in the range from 0.1 up to 0.5N the dissolving action is controlled by both steps. Activation energies for some metals and media were detd. in all 3 ranges mentioned. XIX. Kinetics of dissolving of metal. Karel Šurtek, Ivan Scherba, Jan Vorlíček, Eduard Beránek, and Jan Vorlíček. 764. 1212-17. — The time dependence and temp. dependence of the dissolving rate of metals in aq. solns. at const. concn. of the aggressive component was detd. in cases where no local reaction products are formed on the metal surface. The kinetic equation is of the zeroth order. The results are expressed by an empirical equation in the form $\log K = a \cdot \exp(a_1) - a_2 \cdot T + \exp(a_3) + \log f$, where K is the amt. of the metal dissolved in the time t , at the temp. T , and f is the concn. of the soln. The applicability range of this equation is discussed. XX. Effect of light on the kinetics of corrosion processes. 764. 1214-21. — Light accelerates the corrosion process in which no layer of corrosion products are formed on the metal surface. Light energy increases the rate of the process (both anodic and cathodic) but does not change its mechanism.

fm

8/276/63/000/001/009/028
A006/A101

AUTHORS: Beránek, Eduard, Pražák, Milan, Černý, Miroslav

TITLE: Protection of metals against the effects of wear and corrosion caused by suspensions in aggressive media

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 1, 1963, 56, abstract 1B295P (Czechosl. Patent, cl. 48 d,5, no. 100943, of September 15, 1961)

TEXT: A patent is delivered for a method protecting against failure of internal surfaces of metal pipes, through which aggressive liquids with suspended solid particles flow. It is recommended to use special admixtures, corrosion inhibitors and cathodic protection.

B. Yakovlev

[Abstracter's note: Complete translation]

Card 1/1

ZERANEK, F., inz.; HORSKY, J. J.

Plan of the power supply for the Vysoké Tatry Mountains.
Zdravot. tech 6 no. 6:270 '63.

ANTIPOVIC, Dimitrij; BERANEK, Frantisek

Cultivation and utilization of the world variety of hop. Vest. vyzk
zemedel 9 no.12:245-247 '62.

1. Vyzkumny ustav chmelarnky, Zatec.

83390

9.4/30 2201 2801 2104
2301 3001

Z/037/60/000/005/035/056
E192/E382

AUTHOR: Beránek, I.

TITLE: Development of Photomultipliers of Czechoslovak
Manufacture

PERIODICAL: Československý časopis pro fysiku, 1960,
No. 5, pp. 433 - 434

TEXT: The use of photomultipliers in various branches of science and engineering is briefly reviewed and several types of multipliers developed and manufactured in Czechoslovakia are described. The reasons for the development of special electron tubes such as 62PK401, 61PK411, 63PK10 and 61PK421 are indicated. The constructional details, technological processes, characteristics and applications of the above tubes are described. The application of these photomultipliers in nuclear physics is discussed and modern development trends in this field are reviewed. It is pointed out that, in general, the tubes should have a high gain and a high current overload factor with regard to the dynodes. It is therefore necessary to employ compounds having high secondary emission; such compounds are employed in the dynodes. Various

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Development of Photomultipliers of Czechoslovak Manufacture
types of suitable compounds, the methods of their activation
and the results obtained with them are described. The problems
of developing a photomultiplier with a high resolving power
are analysed. The results achieved are evaluated and an outline
of future research work in this field is given. ✓

ASSOCIATION: Výzkumný ústav pro vakuovou elektrotechniku,
Praha (Research Institute for Vacuum Electro-
technology, Prague)

Card 2/2

88199

Z/038/60/000/010/006/006
A201/A0269.4130 (2801, 3502, 2804)
26.2244

AUTHOR: Beránek, Ivan

TITLE: Czechoslovak Photomultipliers for Nuclear Engineering

PERIODICAL: Jaderná energie, 1960, No. 10, pp. 353 - 354

TEXT: The Výzkumný ústav pro vakuovou elektrotechniku (Vacuum Electrical Engineering Research Institute) in Prague [at present: Oborový výzkumný ústav n.p. Tesla Rožnov (Special Research Institute of the Tesla National Enterprise in Rožnov)] developed two basic photomultiplier types, which are being produced in small quantities. The 61 PK 411 photomultiplier is a ten-stage, electrostatically focused tube with a semitransparent cesium-antimonide photocathode with an effective diameter of 40 mm. A photograph of the photomultiplier is shown in Figure 1 and its principal dimensions in Figure 2. The focusing system consists of a tray-shaped electrode with a rectangular aperture. Its potential is variable within the range defined by the potentials of the photocathode and the first dynode, respectively. The dynode assembly consists of 10 dynodes in circular arrangement; the anode has the shape of a flat grid and is enclosed in the last dynode. This arrangement has the advantage that the anode current is independent of changes in the feed current at

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A201/A026

Czechoslovak Photomultipliers for Nuclear Engineering

the last stage. The tube is mounted on a standard 14-pin base whose connection diagram is shown in Figure 3. Maximum spectral sensitivity of the photocathode is in the region of $460 \text{ m}\mu$. Minimum integral sensitivity of the photocathode is $40 \mu\text{a/lumen}$, the average being at $60 \mu\text{a/lumen}$. The amplification power of the tube at a total operating voltage of 1,250 v is of the order of $10^5 - 10^7$. The tube is primarily designed for measurements in nuclear engineering, but it can also be used for flying-spot television pickup, and wherever luminous fluxes of very low intensity are to be indicated. The 61 Pk 421 photomultiplier is likewise a ten-stage electro-statically focused tube with a semitransparent cesium-antimonide photocathode with an effective diameter of 110 mm (effective area 100 cm^2). A photograph of the tube is shown in Figure 6 and a diagram of its principal dimensions is shown in Figure 7. The focusing system consists of an internal conductive coating and a tray-shaped focusing electrode with a rectangular aperture. The electrode potential is variable within the range defined by the potentials of the photocathode and the first dynode respectively. The multiplier uses a total operating voltage of 1,400 v. The dynode assembly, tube base and its connections are similar to those of the 61 PK 411 photomultiplier. The minimum integral sensitivity of the photocathode is $25 \mu\text{a/lumen}$, the average being 35 - $40 \mu\text{a/lumen}$. The

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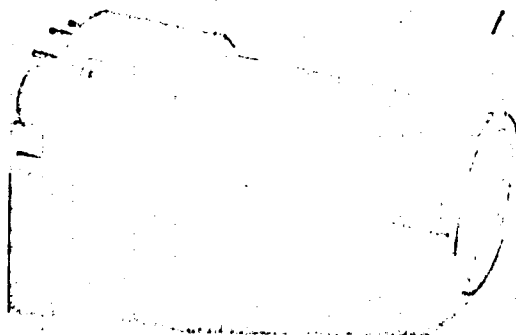
2/038/60/000/010/006/006
A201/A026

Czechoslovak Photomultiplier for Nuclear Engineering

amplification power is similar to that of the 61 PK 411 photomultiplier. The 61 PK 421 photomultiplier is designed primarily for measurements in nuclear engineering, but it has a wide range of other uses, especially in color television. There are 2 photographs and 6 figures. X

ASSOCIATION: Výzkumný ústav pro vakuovou elektrotechniku (Vacuum Electrical Engineering Research Institute)

Figure 1: Photomultiplier 61 PK 411



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Czechoslovak Photomultiplier for Nuclear Engineering

Figure 2: Principal dimension of photomultiplier 61 PK 411

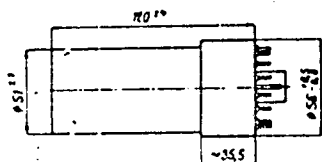
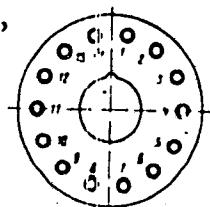


Figure 3: Connection of the base of photomultipliers 61 PK 411 and 61 PK 421. 1 through 10 - dynodes; 11 - anode; 13 - focusing electrode; 14 - photocathode



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88199

Z/038/60/000/010/005/005

A201/A026

Czechoslovak Photomultiplier for Nuclear Engineering

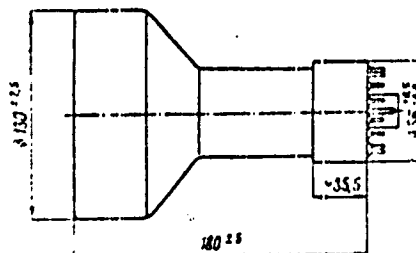


Figure 6: Photomultiplier 61 PK 421

Figure 7: Principal dimensions of photomultiplier 61 PK 421

Card 5/5

BERANEK, Ivan, ...

...

Development of Czechoslovak photomultipliers. Sbor vak elektrotech
3:5-15 '61.

1. Vyzkumny ustav pro vakuum elektrotechniku, Praha.

1. 1971, 1.; 1972, 1.

2. 1971, 1. components and their analogs. 1. 1971, 1.
Ca Chem. 1971, no. 1, 1971, 1.

3. Institute of Genetic Chemistry and Biophysics, Russian
Academy of Sciences, 1971.

PITHA, J.; BERANEK, J.

Nucleic acid components and their analogues. Pt. 32.
Coll Cz Chem 28 no.6:1507-1515 Je '63.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

PERANEK, Jan

Routine determining of the silica content in the air-borne dust by the differential thermal analysis. Rudy 1.1 no.2:60-62 F '63.

1. Ustav pro vyzkum rud, Praha.

ROUSKOVA, Eva; BERANEK, Jan, promovaný geolog.

Examination of the flying dust in mines by electron microscope. Rudy 11 no.11: Supplement: Prace výzkum-
nych ústavů no.6:39-46 F'63.

1. Ústav pro výzkum rud, Praha.

L 13886-66 EPT(m)/EWP(k)/EWP(t)/IWP(h) IN/IN
ACC NR: AP0001829 SOURCE CODE: CZ/0032/66/015/012/0956/0956

INVENTOR: Beranek, J. (Prague)

ORG: none

TITLE: Sizing by means of explosives Class 7 No. 112713

SOURCE: Strojitrenstvi, v. 15, no. 12, 1905, 956

TOPIC TAGS: metal machining, metal finishing, finishing machine, explosive charge, size, sizing

ABSTRACT: The invention deals with sizing by means of explosives in the case of worked pieces with holes. It is used with a protecting foil to create a vacuum between the die and the worked material. This eliminates additional manual processing. The procedure is illustrated in a diagram (Fig. 1). The worked piece 5 is placed on the operational slab of the die 1, with the hole on the rubber gasket 3. The cavity with cutting edges, which has formed below the aperture in the die, is filled with hard wood 6. Foil 2 is placed on piece 5. The foil is tightened by a packing frame 4 which is used for sealing. A vacuum is formed in the space between foil 2 and the operational slab of the die. The entire assembly is submerged in a fluid and the explosive charge 7 is detonated. A similar procedure is followed when forming

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ACC NR: AP8001829

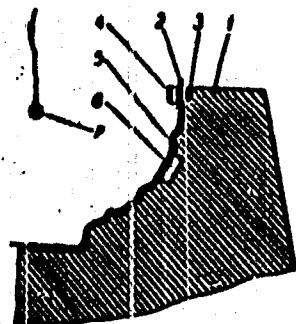


Fig. 1. Sizing by explosion

takes place in the atmosphere, in which case a pouch filled with a liquid is used.
Orig. art. has: 1 figure.

[08]

SUB CODE: 13/ SUBM DATE: 30Aug63/ ATD PRESS: 4195

3B
Card 2/2

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Processes and Apparatuses of Chemical Technology.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67694.

Author : ~~Beranek~~ J., Klumpar I.

Inst : Not given.

Title : Discussion of Singer's Article "Theoretical Bases
of Processes Involving Pseudoliquification".

Orig Pub: Chem. prumysl, 1956, 6, No 3, 120-121.

Abstract: No abstract.

Card 1/1

BERANEK, Jaroslav

CZECHOSLOVAKIA/Processes and Equipment for Chemical
Industries - Processes and Apparatus for Chemical
Technology

K-1

Abs Jour : Referat Zhur - Khimiya, No 9, 1957, 33222

Author : Beranek Jaroslav, Klumpar Ivan

Inst :

Title : Graphic Computation of the Rate of Drop of Spherical
Particles

Orig Pub : Chem. prumysl, 1956, 6, No 5, 210-212

Abstract : On the basis of the balance of forces acting upon a
spherical particle dropping within a fluid the following
equation was derived: $y = -2x + q(I)$, where $y = \lg \phi$
 $= \lg f(Re)$; ϕ -- coefficient of resistance; $x = \lg Re$;
 $q = \lg \left[\frac{4gd}{3} + \frac{d^2 \Delta \rho}{(\nu^2 \rho_f)} \right]$; g -- free
fall acceleration, d -- diameter of particle, $\Delta \rho$ --
difference in density between the material of the particle
and the fluid, ρ_f -- density of fluid, ν -- kinematic

Card 1/2

CZECHOSLOVAKIA/Processes and Equipment for Chemical
Industries. Processes and Apparatus for Chemical
Technology

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Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 33222

viscosity of fluid. The abscissa of the point of intersection of the straight line defined by equation (I), with the curve $y = \varphi(x)$, which expresses, in $y - x$ coordinates, the correlation between the coefficient of resistance ψ and Re , determines the value of the number Re corresponding to the rate of drop of the particle. To facilitate computation a nomograph and a graph have been plotted and unified, on the combined use of which the rate of drop of the particle within the fluid can be determined, if the physical characteristics of particle and fluid are known. The described method of determining the rate of drop of a particle within a fluid is applicable to calculations of processes of fluidization, sedimentation, filtration and pneumatic transport.

Card 2/2

BERANEK JA

CZECHOSLOVAKIA / Chemical Technology. Chemical H-2
Products and Their Application. Processes
and Apparatus for Chemical Technology

Abs Jour : Ref. Zhur. - Khimiya, No.2, 1958, No. 4853

Author : Beranek Jaroslav, Klumper Ivan

Inst : Not Given

Title : Hydrodynamic Characteristics of Fluidized
Layer. Part II. New Theory of Fluidization.

Orig Pub : Chem. listy, 1956, 50, No 11, 1673-1682

Abstract : The new theory of computation of the fluidiza-
tion process has been evolved on the basis of
vectorial expression of hydrodynamic forces act-
ing upon the particles, and of the theory of
similitude, and it has been substantiated by ex-
perimental results of the authors and of other

Card : 1/3

CZECHOSLOVAKIA / Chemical Technology. Chemical H-2
Products and Their Application. Processes
and Apparatus for Chemical Technology

Abs Jour : Ref. Zhur. - Khimiya, No.2, 1958, No. 4853

Abstract : researchers. The deductions relate to a fluidized layer in which no intake and no withdrawal of particles occur. The theory is predicated upon the velocity of descent of the particles, in accordance with which dimensions and shape of the particle are characterized. On utilization of the velocity of descent of the particle, new equations are proposed for the calculation of pressure loss and for expressing the Reynolds criterion; these equations do not contain the linear dimension of the particle. A general graph is given to show the correlation between depth ratio of fluidized and stagnant layers, and the ratio of flow velocity to velocity of descent; from this graph it is

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. CZECHOSLOVAKIA / Chemical Technology. Chemical H-2
Products and Their Application. Processes
and Apparatus for Chemical Technology

Abs Jour : Ref. Zhur. - Khimiya, No. 2, 1958, No. 4853

Abstract : possible to determine velocity values corresponding to beginning of fluidization and the beginning of entrainment of particles, and also the increase in layer depth as a function of flow velocity. Results of experiments and the published data are in good agreement with the derived equations. Part I see RZhKhim, 1957, 46831.

Card : 3/3

~~BEKANE~~, Yaroslav KLUMPAR, Ivan.

Use of a catalyst in a suspended bed in the oxidation of sulfur dioxide; criticism on the article. Khim. prom. no.1:42-43 Ja-F '57. (MLRA 10:4)

1. Nauchno-issledovatel'skiy institut organicheskikh sintezov, Pardubitz-Rybitvi, Chelhoslovatskaya Respublika.
(Fluidisation) (Sulfur dioxide) (Oxidation)

BIRANEY, J.

Catalytic fluidization reactors and their design.

p. 57 (Chemický Průmysl. Vol. 7, no. 2, Feb. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEA) LC. Vol. 7, no. 2,
February 1958

5(4)

SOV/64-59-1-14/24

AUTHORS: Beranek, Ya., Sokol, D.

TITLE: Theory of the Pseudoliquidified Layer (teoriya psevdoozhizhennogo sloya)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 62-68 (USSR)

ABSTRACT: The present paper is a contribution to a sequence of discussions (Refs 1-3). If the particles of a layer in heterogeneous processes (adsorption, drying, calcination, etc) are in dynamic equilibrium with the passing medium (liquid or gas), i.e. they behave like liquids (exert a hydrostatic pressure on the wall of the vessel, are viscous, etc), this layer is called "pseudoliquid". The velocity of transition from a stationary to the "pseudoliquidified layer" is called "the critical velocity of pseudoliquefaction". The nature of the movement of particles in the pseudoliquidified layer can be divided into some types. Similar to the Archimedean criterion, a dynamic criterion of the quantity Ω (which neglects the linear particle size) is derived, and diagrams of the falling speed of spherical particles in the stagnant liquid medium (Fig 1) as well as of particles of various shapes (Fig 2) are plotted. Experiments on the falling speed of a mixture of particles of various

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Theory of the Pseudoliquidified Layer

SOV/64-59-1-14/24

shapes were carried out in a device (Fig 3) according to the carrying-away speed, and were represented graphically (Fig 4). For the practical application of the pseudoliquidified layer in industries the conditions of transition into the pseudoliquid state, the velocity of gas at which the particles are carried away from the layer, the expansion of the layer and the loss of pressure must be known. Corresponding equations and diagrams (Figs 5-7) are given for the computation of these data. There are 7 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh sintezov, Pardubice, Czechoslovakia
(Scientific Research Institute for Organic Syntheses, Pardubice, Czechoslovakia)

Card 2/2

10(2)

SOV/64-59-5-17/28

AUTHORS: Beránek, J., Sokol, D.

TITLE: Velocity of Pseudoliquefaction of Particles With Asymmetrical Shape

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 430-435 (USSR)

ABSTRACT: A new method was elaborated for evaluating the phase of the particle in a pseudoliquefied layer, applying the velocity of the free fall and the weight of the particle. The influence of the particle shape is usually considered by a form factor as given in tables (Ref 5). As was shown in a previous paper (Ref 5), the free fall of particles may be described by the function $\varphi_1(Ar, \Omega) = 0$ (1). The different curves in the diagram $\lg \Omega - \lg Ar$ (Ref 8) refer to the different functions according to different shapes of the particle. To determine the dynamic properties of the particle in a pseudoliquefied layer the criterion of the dynamic resemblance of particles is introduced, admitting a comparison for constant amounts of the criterion Ar or of the criterion Ω . In spite of the sudden variation of the resistance coefficient, that occurs near the region

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SOV/64-59-5-17/28

Velocity of Pseudoliquefaction of Particles With Asymmetrical Shape

of turbulence (Fig 1), calculations base on the shape of an "ideal" sphere, according to the best resemblance of its fall characteristics to that of real spheres in the laminar and transient region of the flow. The criterion of dynamical resemblance of differently shaped particles may be plotted down in diagrams (Fig 2). The flow velocity of the liquid was measured at the moment of transition into the pseudoliquefied phase for different values (in the laminar, transition and turbulence region) of the criterion, that characterizes the motion of the particles in a liquid (Fig 3). 8 examples of calculation (partly of industrial interest) explain the described method of calculation. There are 6 figures and 8 references, 1 of which is Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh sintezov, Pardubice, Czechoslovakia (Scientific Research Institute of Organic Synthesis, Pardubice, Czechoslovakia)

Card 2/2

BERANEK, J.; SOKOL, D.

Fluidization point of irregular particles, p. 5

CHEMICKÉ PRŮMYSL. (Ministerstvo chemického průmyslu) Praha, Czechoslovakia
Vol. 9, no. 1, Jan. 1959

Monthly List of East European Accessions, (EEAI) IC, Vol. 8, No. 7, July 1959
Uncl.

Z/011/62/019/004/004/008
E073/E335

AUTHOR: Beranek, J.

TITLE: Basic economic problems of processing spent (nuclear) fuels

PERIODICAL: Chemie a chemická technologie; Přehled technické a hospodarské literatury, v. 19, no. 4, 1962, 155, Abstract Ch 62-2120 (Symposium of the First All-State Conference on Nuclear Engineering, January 28-30, 1959, Part II, 245-267)

TEXT: Schemes of fuel cycles are outlined. In the first case, the fuel is not processed further after being removed from the reactor, in the second case, partially-spent fuel is processed and plutonium is returned to the reactor, whilst in the third case, a part of the burnt uranium is re-used together with the plutonium. Handling capacity of plants for processing irradiated fuels, selection of equipment and method of maintenance. Processing and transportation of the irradiated fuel. Nuclear safety. 2 sketches, 4 diagrams, 5 tables, 21 references.

Abstractor's note: this is a complete translation.

Card 1/1

BERANEK, J.

Processing of the liquid radioactive waste from the Center of
Nuclear Research in Saclay. Jaderna energie 6 no.7:244-245 J1 '60.

BERANEK, J.

International conference on plutonium metallurgy in Grenoble,
1960. Jaderna energie 6 no.9:322-323 S '60.

BERANEK, Jaroslav, inzh.; SOKOL, Drakhomir [Sokol, Drahomir], inzh.;
AYNSHTEYN, V.G., kand. tekhn. nauk, [translator]; GEL'FERDI,
N.I., doktor tekhn. nauk, prof., red.; TITSKAYA, B.F., ved. red.;
POLOSINA, A.S., tekhn. red.

[Techniques of fluidization] Tekhnika psevdoochizhenia. Pod red.
N.I. Gel'perina. Moskva, Gostoptekhzdat, 1962. 159 p. Translated
from the Czech. (MIRA 15:12)

(Fluidization)

BERANEK, JAROMIR

SURNAME, Given NAME

Country: Czechoslovakia

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Affiliation: State Veterinary Unit - Research Station (Krajske veterinarni zarizeni
vysetrovaci stanice) Brno

Source: Prague, Sbornik CSAZV, Veterinarni Medicina, Vol 6(34), No 3, Aug 61; pp 619-626

Data: "Conserved Hydrolyzed Fish Meal as High-Quality Feed Supplement"

BERANEK, Jaromir: veterinarian, iazenir

SVRABOVA, Ruz

NESEK, Theodor; DM, PhD

GPO 981643

BERANEK, Jindrich

A peaceful neighbor of Czechoslovakia. El tech order 51 no.10425.
526 0 '64.

BERANEK, Jindrich

Preparing the 12th Congress of the Communist Party of
Czechoslovakia. El tech obzor 51 no.8:377-378 Ag '62.

ZELIČKA, J.; BERANEK, J.; ŠÍRŤ, J.

CSSR

Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of
Science, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 12, 1962,
pp 2764-2795

"Preparation and Methanolysis of Uridine, 6-Azauridine and 6-Azacytidine
O-Formyl Derivatives"

(3)

BERANEK, J

CZECHOSLOVAKIA

BERANEK, J.; SORM, F.

CSLR

Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Science, Prague (for both)

Prague, Collection of Czechoslovak Chemical Communications, No 2, 1963,
pp 469-480.

"Nucleic Acids Components and their Analogues. XLIX.
The Synthesis of 5-Azacytidine-5' Phosphate and 5' Diphosphate"

BERANEK, J.

2

ZEMLICKA, J.; BERANEK, J.; SKYT, J.

CSSR

Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of
Science, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 12, 1962,
pp 2784-2795

"Preparation and Methanolysis of Uridine, 6-Azauridine and 6-Azacytidine
O-Formyl Derivatives"

(3)

CZECHOSLOVAKIA

PITHA, J; BERANEK, J.

Institute of Organic Chemistry and Biochemistry of the
Czechoslovak Academy of Sciences, Prague (for both)

Prague, Collection of Czechoslovak Chemical Communications,
No 6, 1963, pp 1507-1514

"Nucleic Acid Components and Their Analogues. XXXII. Infrared Spectra of Nucleosides with an Anomalous Heterocyclic Base. Tautomerism of 6-Azacytidine Derivatives."

BERANEK, Jindrich

The result of the discussion preceeding the 12th Congress of the
Communist Party of Czechoslovakia. El tech obzor 51 no.12:617-618
D. 62.

BERANEK, J. .

Discussion on the relationship between natural and social factors
in human psychological functions. Cesk. psychiat. 58 no.5:339-343
O '62.

1. Katedra dialektického a historického materialismu fakulty všeobecného
lékarství KU v Praze.

(PSYCHOLOGY)

CHICKS/STORIA

Jan. 1961 and V. 1961, Department of Dialectic and Materialism,
Faculty of General Medicine, Charles University, Prague
and the Institute of Dialectic and Materialism, Faculty of Medicine, Charles
University, Prague.

Regarding the "Materialist" comments on the discussion at the National
Institute for the Human Future.

Prague, 1961, Charles University, Prague, Vol. 19, no. 1, Jan. 1961, p. 10.

All of the above is a conclusion drawn from the fact that
the "Materialist" comments on the discussion at the National
Institute for the Human Future are a serious and
valuable contribution to the scientific and philosophical
discussion of the human future.

1324
4532
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3
✓ Basic economic questions of the processing of irradiated
fuels. JH Beránek. *Jednotná energie* 5, 117-28 (1980).
Unless the burnup of the fuel is higher than about 10,000
Mw-days/ton, it is economical to recover U and Pu from
spent fuel elements. The min. economic capacity for a
processing plant is 2 to 10 tons of natural or partly enriched
U per day. A processing plant should serve several power
plants; transportation costs are not important. The neces-
sary high capacity can be reached in a continuous process,
in spite of necessary precautions against criticality. Main-
tenance by remote control, at least in the more active stages,
although it requires costly equipment, is more economical in
a large-capacity plant than lengthy shut-downs. H. N.

Beranek, J.

Behind the window of laboratory

/~~Reisner, J.~~ Benet, J., and Streibl, M.: Za okny labora-
torie. Prague: Mladá Fronta. 1983. 212 pp. 17.50.
Kčs. Reviewed in Chem. Listy 48, 79 (1954).

BERANEK, J.

A simple synthesis of γ -aminobutyric acid. J. Beranek and J. Hudlický (Chem. Akad. Věd, Prague, Czech.). Chem. Listy 47 (1952) 91 (1952). A prepn. of $\text{H}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (I) is described by the hydrogenation of $\text{NCCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (II) or $\text{NCCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{Et}$ (III). $\text{CICH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (I) is reduced with KCN and KI to $\text{H}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (I) in 10% yield. $\text{CICH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{Et}$ (III) is reduced with KCN and KI to $\text{H}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{Et}$ (II) in 10% yield. This was hydrolyzed at 20°C with KOH to $\text{H}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ (I) in 10% yield. Hydrogenation of 5 g. II in 25 ml. MeOH and 110 atm. yielded 1.1 g. (22%) I. Raney Ni at 90°C and 110 atm. yielded 1.1 g. (22%) I. Raney Ni at 90°C and 110 atm. yielded 1.1 g. (22%) I. The same product was obtained by hydrogenating 5 g. III in AcOH 25 ml. and 1 ml. H_2O over 0.5 g. PtO_2 at 120°C and 100 atm. for 1 hr. and hydrolyzing the product with Ba(OH)_2 . Yield 1.1 g. (22%) I. M. Hudlický

DEKAYEN, JIRI

★ Beránek, J. M. Theorie turbulentního proudění tekutin.
Theory of turbulent flow. (Suda.) Nakladatelství
Československé Akademie věd. Praha, 1954. 92 pp.
20 figs.

I - P/11

Chapter headings: 1) General properties of turbulent
flow. 2) Elements of the theory of viscous flow. 3) Turbu-
lent friction. 4) Statistical methods. 5) Kolmogorov's
theory of locally isotropic turbulence. 6) The spectrum of
turbulence. 7) Applications of the statistical theory of
turbulence in hydraulics. 8) Supplements.

gfl

SORM, P.; BERANEK, J.

Synthesis of 1-azoniatricyclo-(3,3,3,0)-undecane bromide [in English with summary in Russian]. Sbor.Chekh.khim.rab. 19 no.2:298-304 Apr '54.
(MLRA 7:6)

1. Department of Organic Synthesis, Institute of Organic Chemistry,
Czechoslovak Academy of Science, Prague.
(Undecane bromides)

BERANEK, I.

CZECH

Reaction of ketone III. The reaction of ketone with
 and chloroform (Beranek, 1911; and Prantl, 1911)
 with next to the (COCl) group a neg.
 group like CH₃, COCl, CCl₃, COCl, COCl₂, CHCl₃, COMe,
 and CH₃Ph, give primarily the corresponding aceto-
 netyl chlorides. The case of the reaction drops in the order
 given. Passing 1 (0.1 mole/hr.) into a 100 ml. contg. 14 g.
 CH₃COCl, in 10 ml. CHCl₃ 3.5 hrs. at -15°-10°, esterify-
 ing the mixt. with 10 ml. EtOH, and distg. the product in a
 water yielded 10.5 g. COClCH₂COCl, b.p. 105-110°, d₄²⁰
 1.112, n_D²⁰ 1.420; semicarbazone, m. 90°. Treat-
 ing 54.5 g. Cl₂COCl (II) in 50 ml. CHCl₃ with 1 (0.1
 mole/hr.) 3 hrs. at 15°, adding to the mixt. 50 ml. abs.
 EtOH, and distg. the mixt. in vacuo gave 10.5 g. COCl-
 COCl, and 37% of a solid which yielded 17.1 g. Cl₂CCl₂.
 Cl₂COCl₂ (III), m. 101° (decaying pt.) (from Cl₂CH-
 EtOH). Fractionation of the mother liquors in vacuo
 gave 13.5 g. Cl₂COCl₂COCl (IV), b.p. 101-102°. Sugg.
 13.5 g. II in 10 ml. CHCl₃ 1.5 hrs. at -15° with 1 (0.1
 mole per hr.), esterifying the mixt. with 20 ml. EtOH,
 and distg. off the solvents and 12 g. COClCOClMe, b.p. 48°.
 gave 11.1 g. III and 1.35 g. COClCOCl₂Me, b.p. 48°.
 Treatment of 11.2 g. II in 20 ml. CHCl₃ with 0.1 mole of
 I at 15° gave, after stripping off the solvent in vacuo, 6.2
 g. COClCOCl₂COCl, unstable and hygroscopic,
 crystals, m. 62-63°, giving III on melting. Passing 0.1
 mole I into a soln. of 12.0 g. COCl₂ in 10 ml. CHCl₃ at

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(0-5° and distg. off in vacuo at 0° (5.2 g., 41%), esterifying the residue with 20 ml. EtOH, and distg. the mixt. IR, $\text{COCH}_2\text{CO}_2\text{Et}$ (IV), bp 107-113°, n_D^{20} 1.4516, d_4^{20} 1.027, m. 102°. g. ClCOCH_2Et in 20 ml. CHCl_3 with refluxing the mixt. 30 min. with 20 ml. EtOH, and stripping off the solvent gave 2.3 g. unreacted (COCl_2) by refluxing 30 min. in excess gave 8.2 g. bp 83°, d_4^{20} 1.1234, m. 13.6°, 0.4 mole I at 15°, 1. abs. EtOH, and $\text{EtOCCCH}_2\text{CO}_2$ CH_2CO_2 , m. 105° (from $\text{C}_6\text{H}_5\text{Et}$ (H 10:1), 3.16 g. (CO_2Et), bp 73°, and 0.6 g. (20%) IV, bp 111-12°. Satg. a boiling soln. of 14.5 g. CHCl_3CO_2 in 20 ml. CHCl_3 with 0.4 mole I and esterifying the mixt. with 20 ml. EtOH gave 9 g. $\text{CHCl}_3\text{CO}_2\text{Et}$, bp 81°, and 1.5 g. (12%) $\text{CHCl}_3\text{CO}_2\text{Et}$, bp 104-5°, n_D^{20} 1.4664. The reaction of I with Ac_2O (5 g.) yielded 4.06 g. $\text{AcCOCH}_2\text{CO}_2\text{Et}$, bp 80-81°, n_D^{20} 1.4516, and 1.12 g. $\text{AcCOCH}_2\text{CO}_2\text{Et}$, bp 80-81°, n_D^{20} 1.4516. Satg. the boiling soln. of 15.4 g. PhCH_2CO_2 in 20 ml. PhCl with 0.4 mole I, and esterifying the mixt. with 20 ml. EtOH yielded 14.3 g. $\text{PhCH}_2\text{CO}_2\text{Et}$, bp 101-5°, and 2.02 g. $\text{PhCH}_2\text{CO}_2\text{Et}$, bp 100-5°, n_D^{20} 1.4516. Also in Collection Czechoslov. Chem. Commun. 14, 1131-7 (1954) (in German). M. Hudlická

Berneck, J. H.

Reactions of ketone. IV. Reaction with acid
in H_2SO_4 solution. (See Part I, p. 100)
Frantek, J. H. (Czech. Acad. Sci., Prague
Comm., 1957, 19, 77(1958); Collection Czechoslov. Chem.
20, 225-231(1955)(in German); cf. C.A. 49, 904
old SO₂ proved to be an excellent medium for
action of CH_3CO (5) with acid chlorides. 7)
of the appropriate acetoacetic derivative approx-
high as compared to the yields in CH_2Cl_2 . MeNO,
suitable solvent than CH_2Cl_2 , and MeCN gave no y.
Reactions were carried out by condensing SO₂
fitted with a Dry Ice condenser, and by passing
liquid SO₂ contg. an acid chloride. EtO₂CCOCl (4
30 ml. SO₂ was treated during 30 min. with 0.5 ml.
with 15 ml. abs. EtOH; the mist. allowed to stand
and fractionated to give 5.3 g. EtO₂CCOCH₂COEt,
10°, n_D²⁰ 1.4583. CCl₄COCl (9.1 g.), 30 ml. SO₂, 0
and 20 ml. EtOH yielded 7.4 g. CCl₄COCH₂COEt,
17°. CHCl₃COCl (14.7 g.), 30 ml. SO₂, 0.4 ml.
EtOH gave 7.4 g. CHCl₃COCH₂COEt, bp 116-
146/1. Passing 0.2 mole I during 1 hr. into 6.3 g. (CO
Cl) in 25 ml. SO₂, allowing the mist. to stand
esterifying with 25 ml. abs. EtOH, evap. the solvent,
the cryst. residue with 5 ml. EtOH, drying the
and washing them with 5 ml. EtOH, dried 3.7 g. (COCH₂
COEt), (II), m. 81° from EtO₂. Fractionation of the
mother liquor gave 2.1 g. EtO₂CCOCH₂COEt, bp
and 1.7 g. II, bp 113-12°. Total yield of II was 5.4 g.
Under the same conditions, I did not react with
CHCl₃COCl, bp 102° (prepd. in 90% yield by treat-
g. fumaryl chloride with 10 g. EtOH at 20° and wa-
stings).

V. Reaction of ketone with substituted malonyl chlorides
Frantek (Form. J. H. Berneck, J. H. Scott, and J. H. Scott,
Chem. Abstr. 49, 78-81(1953); Collection Czechoslov. Chem.
Comm., 19, 603-6(1958)(in German). From many sub-
stituted malonyl chlorides tested, only PhCH₂COCl, (I),
PhCH₂CH(COCl)₂, (II), C₆H₅COCl, (III), and CH₃CH₂CH
CH₂COCl, (IV) react with CH_3CO (5) to give
the corresponding dicarboxylates. To prep. I, 10 g.
CH₃COH (VI) in 50 ml. EtO were treated with 25 g.
PCl₅, the mist. was refluxed 2-3 hrs., and dist. in vacuo to
give 0.5 g. I, bp 100-10° (method A). I was hydrolyzed to
VI, m. 181°. Treating 8 g. VI with 18.5 g. PCl₅, refluxing
the mist. 2 hrs., and dist. in vacuo yielded 0.5 g. PhCH₂CO
(COCl)₂, bp 83°; PhCH₂CH(COCl)₂, bp 144°. PhCH₂CH
(COCl)₂ (3 g.) treated with 50 g. SOCl₂, heated 5 hrs. at
80°, and dist. in vacuo yielded 23.5 g. II, bp 110-11°
(method B). PhCH₂CH(COEt)₂, bp 120-4°. Refluxing
17.5 g. CCl₄COH and 41 g. PCl₅, 3 hrs. on the steam bath
yielded 11.2 g. III, bp 50-7° (method C). The following
acid chlorides were prepd. by methods A, B, and C (method

3

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Yield, and m.p. given: 24. CH_3COCH_3 , 4.48, bp 58°;
 $\text{Me}_2\text{C}(\text{COCH}_3)_2$, C. 60, bp 60°; $\text{EtCH}(\text{COCH}_3)_2$, C. 50, bp 73°;
 $\text{PrCH}(\text{COCH}_3)_2$, 4.70, bp 80°; $\text{iso-PrCH}(\text{COCH}_3)_2$, 4.71,
bp 77°; IV, C. 55, bp 80°; $\text{EtCH}(\text{COCH}_3)_2$, C. 77, bp 70°;
 $\text{BuCH}(\text{COCH}_3)_2$, 5.64, bp 122°; $\text{iso-BuCH}(\text{COCH}_3)_2$, bp 114°;
 $\text{BuCH}(\text{CO}_2\text{Et})_2$, bp 128°; $\text{Bu}_2\text{C}(\text{CO}_2\text{Et})_2$, bp 120°. Passing
at 0° 0.5 mole into a soln. of 10.5 g. in 80 ml. CHCl_3 dur-
ing 1 hr., and heating the soln. 30 min. with 20 ml. EtOH
gave by distn. 1.3 g. $\text{PhCH}(\text{CO}_2\text{Et})_2$, bp. 71-80°, and 5.5 g.
40% $\text{PhCH}(\text{CO}_2\text{Et})_2$, bp. 117°, n_D^{20} 1.5074.
Similar treatment of 10.5 g. II in 80 ml. CHCl_3 with 0.5
mole and EtOH gave 1.75 g. $\text{CCl}_3\text{COCH}_3$, bp. 116-12°
and 3.25 g. $\text{EtO}_2\text{CCH}_2\text{COCH}_2\text{CO}_2\text{Et}$, bp. 111-12°, bp. 110°;
II (11.55 g.) and 0.4 mole V gave 4.5 g. $\text{Et}(\text{OCC}(\text{CH}_3)_2)_2$
 $\text{COCH}_2\text{CO}_2\text{Et}$, bp. 123°, n_D^{20} 1.4889. IV (1 g.) and V gave
1.53 g. $\text{CH}_3\text{CH}(\text{CH}_2\text{CO}_2\text{Et})_2$, bp. 98°, n_D^{20}
1.4390.
M. Rodigast

BERANEK, J.

6

Reactions of ketenes. VI. Reactions with halogen derivatives of sulfur. P. Borat, J. Šurt, and J. Beránek. (Czech. Akad. věd, Prague). Chem. Listy 48(1955) (in German); cf. C.A. 49, 15773d. HSCl , S_2Cl_2 , and SOCl_2 add normally to $\text{CH}_2=\text{CO}$ (I). SOCl_2 is unreactive to $\text{C}_6\text{H}_5\text{COCl}$, and SCl_2 gives polymers. Heating I (0.6 mole) during 2 hrs. into a boiling soln. of 1.80 g. SOCl_2 in 20 ml. liquid S_2Cl_2 , adding 25 ml. abs. MeOH, and distg. the mixt. yielded 9.05 g. $\text{SC}(\text{CH}_2\text{CO}_2\text{Me})_2$, b.p. 91° , n_D^{20} 1.4575. Purifying at -70° , 0.2 mole I during 30 min. into a soln. of 13.5 g. S_2Cl_2 in 15 ml. CHCl_3 , adding to the mixt. 28 ml. MeOH, refluxing the mixt. 10 min., and distg. in vacuo gave 12.2 g. $\text{SC}(\text{CH}_2\text{CO}_2\text{Me})_2$, b.p. 103° , n_D^{20} 1.1168. Purifying 30 min. 0.2 mole I into a soln. of 4.5 g. HSCl in 20 ml. liq. SO_2 , and esterifying the mixt. with 15 ml. EtOAc gave 4.05 g. $\text{EtSC}(\text{CH}_2\text{CO}_2\text{Et})_2$, b.p. 78° .
M. Lindqvist

17-12-55

B. J.
CZECHOSLOVAKIA/Organic Chemistry. Naturally Occurring Substances
and their Synthetic Analogs. G-3

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

Author : Bart, J., Beranek, J., Slicher, J., and Sorm, F.

Inst :

Title : Synthesis of 4-amin-3-isoxazolidone (Cycloserine)

Orig Pub: Chem Listy, 51, No 1, 112-122 (1957) (in Czech);
Sbornik Chekhoslov Khim Dabot, 22, No 1, 262-273
(in English with a summary in Russian)

Abstract: The antibiotic cycloserine (I) (see RZhKhim, 1956, 16239) has been synthesized from the methyl ester of N-tritylserine (II) via the methyl ester of O-mesyl-N-tritylserine (III), 1-trityl-2-carbomethoxyethyleneimine (IV), which on reaction with $\text{NH}_2\text{OH}\cdot\text{HCl}$ gives

Card : 1/10

CZECHOSLOVAKIA/Organic Chemistry. Naturally Occurring Substances
and their Synthetic Analogs. C-3

Abs Jour: Referat Zhur-Khimiya, No 4, 1953, 11467.

hydroamic acid (V); the latter adds HCl with the formation of the hydrochloride of α -amino- β -chloropropionic acid (VI); strongly basic anion exchange resins cyclize VI to I. For comparison purposes 4-benzylamine- (IX) and 4-benzhydrylaminoisoxazolidone-3 (X) were synthesized from N-benzyl-2-carbomethoxyethyleneimine (VII) and N-benzhydryl-2-carbomethoxyethyleneimine (VIII) by the same method. 1-benzylethyleneimine-2-carboxy-droamic acid (XI) is synthesized by refluxing 67.5 gms of the methyl ester of 1,2-dibromopropionic acid [sic] in 550 ml C₆H₆ for 3 hrs with 71.4 gms triethylamine and 38.2 gms benzylamine, shaking the mixture with water for 12 hrs and allowing the mixture to stand with VII [sic] meaning appears garbled for 48 hrs, obtained by eva-

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

porating the benzene solution with cold (5°) hydroxyl-
amine (prepared from 49.5 gms of the hydrochloride of
hydroxylamine in 250 ml CH₃OH and 24.5 gms Na in 300 ml
CH₃OH) in 50 ml CH₃OH, followed by evaporation to 200 ml
at 20°. XI is isolated by dilution with water and neu-
tralization with CH₃COOH. yield 73.6%, mp 154-155° (from
99% alcohol). For proof of structure 0.3 gm XI is hydro-
genated over 0.2 gm PtO₂ in 10 ml CH₃COOH and the product
is refluxed for 3 hrs with 5 ml (1 : 1) HCl (acid); paper
chromatography using the system phenol-water-NH₃ has es-
tablished the presence of alanine (XII) and α -alanine
(7 : 3) in the reaction mixture. Dry HCl gas is passed
for 30 min at 0° into 20 gms I in 200 ml benzene, followed

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11487.

by saturation at 20°. The addition (after 24 hrs) of 200 ml ether results in the precipitation of an 6 : 2 mixture of the hydrochlorides of α -benzylamino- β -chloropropiohydroxamic acid (XIII) (yield 64.5%, mp 164-165° (decomp from CH₃OH)) and β -benzylamino- α -chloro-propiohydroxamic acid (XIV) (yield 16.3%, mp 145° (decomp; from CH₃OH-ether)). XIII (like XI) gives XII and XIV affords β -XII. On standing for 12 hrs and refluxing for 1 hr with trimethylamine (in CH₃OH) XIII gives XI (yield 62%). A mixture of 17.8 gms XIII in 700 ml CH₃OH and a solution of 15.7 gms Na₂CO₃ in 1.2 liter of water (prepared at 0°) is allowed to stand 4 days (20-5°); XI (24.8%) precipitates; the filtrate is evaporated to 30 ml at 40° and acidified with 10%

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Abs Jour: Referat Zhur-ikhimiya, No 4, 1958, 11487.

CH_3COOH in 50% alcohol to pH 6; IX precipitates (28% yield), mp 154° (from 99% alcohol). When the latter product is hydrogenated in CH_3COOH over PtO_2 and refluxed for 3 hrs with (1 : 1) HCl acid, serine is obtained. A mixture (prepared at 10°) of 35.6 gms benzhydrylamine, 40.4 gms triethylamine, and 0.2 mol of the methyl ester of 1,2-dibromopropionic [sic] acid in 350 ml abs benzene is refluxed 4 hrs, the benzene solution is washed with water and evaporated; the yield of VIII is 83%, mp $100.5-101^\circ$ (from benzene). When a mixture of 11.1 gms benzhydrylamine and 6.8 gms N -ethylpiperidine and 10 gms of the methyl ester of α -bromoacrylic acid in 50 ml benzene is refluxed for 2 hrs, the yield of VIII is 94%. A mixture of 0.3 mol

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

VIII $\left[\text{sic} \right]$ is allowed to stand for 3 days with a solution of hydroxylamine (prepared from 45.5 gms $\text{NH}_2\text{OH} \cdot \text{HCl}$ in 300 ml CH_3OH and 22.2 gms Na in 250 ml CH_3OH at 15°), the mixture is diluted with 1 liter water and neutralized with CH_3COOH ; the yield of 1-benzhydrylethylethimine-2-carbohydroxamic acid (XV) is 96%, mp $157-150^\circ$ (decomp; from benzene). The hydrochloride of 1-benzhydrylamino-3-chloropropiohydroxamic acid (XVI) is prepared by saturating a suspension of 0.1 mol XV in 200 ml benzene with HCl gas and allowing the reaction mixture to stand 12 hrs; the yield is 47%, mp $176-178^\circ$ (decomp; from (2 : 5) CH_3CH -ether). XVI (like XI) gives XII. On refluxing (3 hrs) with $(\text{C}_2\text{H}_5)_3\text{N}$ in CH_3OH XVI again cyclizes to XV. X is obtained by mixing (0°) 0.05 mol VII in

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Abs Jour: Referat Zhur-Khiniya, No 4, 1958, 11467.

0.5 liter CH_3OH with 12.5 gms Na_2CO_3 in 1 liter water, allowing to stand 4 days, and acidifying with 50 ml CH_3COOH in 200 ml alcohol; the yield is 73%, mp $139-141^\circ$ (decomp: from CH_3OH). Hydrogenation and hydrolysis of the latter product give serine. The hydrogenation of 0.03 mol X in 100 ml alcohol and 1 ml CH_3COOH over PtO_2 by 200 ml H_2 gives 2.15 gms of the amide of N-benzhydrylserine, mp $142-144^\circ$ (from alcohol). A mixture of 0.03 mol II, 50 ml dry pyridine, and 2.5 ml mesyl chloride is kept 24 hrs at 0.4° , diluted with 200 ml water and CHCl_3 ; III is extracted in 90% yield, mp 123° (from benzene-alcohol) 0.01 mol II in 50 ml dioxane is mixed with NH_2OH (prepared from 14 gms $\text{NH}_2\text{OH}\cdot\text{HCl}$ in 100 ml abs

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

CH₃OH and 5.9 gms Na in 80 ml CH₃OH; after 3 days the reaction mixture is diluted with 100 ml water, and neutralized with CH₃COOH; further dilution results in the formation of a precipitate (33 gms) of N-tritylserinehydroxamic acid, mp 109° (CH₃OH); the product contains 1 molecule of combined CH₃OH. A mixture of 0.02 mol III, 20 ml C₆H₆, 1 ml CH₃OH, and 2.5 gms N-ethylpiperidine is refluxed 8 hrs, diluted with 15 ml CH₂Cl₂, washed with water, and evaporated; the yield of IV is 80%, mp 130-131° (from benzene-cyclohexane). On standing for 3 days a mixture of 0.18 mol IV in 100 ml dioxane and 25.2 gms NH₂OH.HCl and 12.4 gms Na in 150 ml CH₃OH

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

is diluted with water and neutralized with CH_3COOH ; V precipitates, yield 94%, mp $138-140^\circ$ (from 10 : 1 benzene alcohol). λ -trityl- β -chloropropionhydroxamic acid is obtained by mixing 0.05 mol V in 200 ml abs CHCl_3 with a solution of 1 mol HCl in 25 ml ether at -70° and evaporating the solution at 40° ; the yield is 58%, mp $120-124^\circ$ (from C_6H_6) (hydrogenation and hydrolysis both give XII). β -trityl-amino- γ -chloropropionhydroxamic acid (1.8 gms) precipitates from the mother liquor following dilution with 50 ml cyclohexane, mp $133-136^\circ$; hydrogenation and hydrolysis give β -XII. A suspension of 0.1 mol V in a mixture of 100 ml CHCl_3 and 200 ml C_6H_6 is saturated with HCl

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- CZECHOSLOVAKIA/Organic Chemistry. Naturally Occurring Substances and their Synthetic Analogs.

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Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

gas; after 3 hrs VI is obtained by suction filtration, yield 66%, mp 191° (decomp; from CH₃OH-ether). Hydrogenation and hydrolysis of the latter product give XII. 0.06 mol VI in 100 ml water is passed for 10 min through a column containing 300 ml [sic] of amberlite IRA-400C anion exchange resin (strongly basic), the column is washed with 1 liter water (1 hr), and the product is eluted at 0° with 20% CH₃COOH. The eluate is collected until the pH attains 5.8, and the solution (60 ml) is diluted with 450 ml alcohol; at -60° DL-I precipitates, yield 51%, mp 141-142.5° (from 20% alcohol).

Card ; 10/10

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their
Applications. Chemical and Technological Aspects of
the Nuclear Industry.

E

Abs Jour: Ref Zhur-Khim., No 8, 1959, 28006.

Author : Beranek, J. and Holub, F.

Inst :

Title : Processing of Uranium Ores. I. The Leaching of Uranium
Ores and the Precipitation of Uranium Salts.

Orig Pub: Jaderna Energie, 4, No 2, 34-39 (1958) (in Czech with
English and Russian summaries).

Abstract: A survey with a bibliography listing ten titles. --
I. Elinek.

Card : 1/1

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CZECHOSLOVAKIA/Chemical Technology. Chemical Products and
Their Applications. Chemical and Technological
Aspects of the Nuclear Industry.

H

Nbs Jour: Ref Zhur-Khim., No 10, 1959, 35442.

Author : Beranek, J. and Holub, F.

Inst :

Title : The Processing of Uranium Ores. II. Separation of
Uranium by Ion Exchange and by Extraction with Aqueous
Solvents. III. J

Orig Pub: Jaderna Energie, 4, No 3, 66-73; No 4, 93-98 (1958)
(in Czech with English and Russian summaries).

Abstract: II. A review article with a bibliography listing
29 titles. III. The authors described a semi-
industrial scale plant for the processing of U ores

Card : 1/2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and
Their Applications. Chemical and Technological
Aspects of the Nuclear Industry.

R

Abstr Jour: Ref Zhur-Khim., No 10, 1959, 35442.

under construction in the Czechoslovak Peoples
Republic. The plant is designed for the investigation
of a number of technological processes and modifica-
tions thereof. Questions of equipment design and of
labor sanitation are also discussed. For Communication
I see RZhKhim, 1959, 28006. -- I. Yelinek.

Card : 2/2

1-2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Applications. Chemical and Technological Aspects of the Nuclear Industry. H

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 19977

Author : Ecranek, Jiri; Pulkrab, Antonin; Zoch, ~~Cidrich~~

Inst : -

Title : Production of Radioactive Isotopes in Nuclear Reactors.

Orig Pub : Jaderna energie, 1958, 4, No 3, 216-220

Abstract : No abstract.

Card : 1/1

H-18

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their H-13
Application. Ceramics. Glass. Binding Materials. Concrete

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82338

Author : Beranek J., Lustig K.

Inst :

Title : Use of Silicates in the Refining of Highly Active Wastes

Orig Pub : Sklar a keramik, 1958, 8, No 4, 102-106

Abstract : The presently used method of storage of the concentrated li-
quid radioactive materials has considerable shortcomings.
It is safer and simpler to store such materials in the
solid form. This work is devoted to the study of possi-
bilities of the conversion of radioactive isotopes from the
liquid into the solid phase. As one of such methods is the
use of ionites. However, the organic ionites are subject to
decomposition when acted upon by strong irradiants and,
therefore, cannot be employed for highly active wastes.
Stability of the inorganic ion exchange materials, on the

Card : 1/3

SMRT, J.; BERANEK, J.; SORM, F.

Nucleic-acid components and their analogies. IV. Synthesis of
 β -d-ribofuranosyl-6-azauracil-5' phosphate and pyrophosphate.
Coll Cz Chem 25 no.1:130-137 Ja '60. (EEAI 9:12)

1. Department of Organic Synthesis, Institute of Chemistry,
Czechoslovak Academy of Science, Prague.
(Nucleic acids) (Phosphates) (Pyrophosphates)
(Ribofuranosyltriazinedione)

BERANEK, J.; SMRT, J.

Nucleic-acid components and their analogues. VII.Synthesis of
6-azauracil riboside (6-azauridine) phosphates. Coll Cz Chem 25
no.8:2029-2037 Ag '60. (EIAI 10:9)

1. Department of Organic Synthesis, Institute of Chemistry, Czecho-
slovak Academy of Science, Prague.

(Nucleic acids) (Ribofuranosyltriazinedione phosphate)
(Azauracil ribosidephosphate)

BERANEK, Jiri; HOLUB, Frantisek

Processing of uranium ores. Part 2. Jaderna energie 4
no.3:66-73 Mr '58.

1. Chemoprojekt, Praha.

BERANEK, Jiri; HOLUB, Frantisek

Processing of uranium ores. Part 3. Jaderna
energie 4 no.4:93-98 Ap '58.

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BERANEK, Jiri

"Nuclear chemical engineering" by M. Benedict and T.H. Pigford.
Reviewed by Jiri Beranek. Jaderna energie 4 no.6:175-176 Je '58.

BERANEK, Jiri; PULKRAB, Antonin; ZOCH, Oldrich

Production of radioisotopes in nuclear reactors.
Jaderna energie 4 no.8:216-220 Ag '58.

1. Chemoprojekt, Praha (for Beranek). 2. Vyzkumny ustav
radiologicky, Praha (for Pulkrab). 3. Ministerstvo
chemickeho prumyslu, Praha (for Zoch).

BERANEK, J.

Conference on Radioactive Waste Disposal in Monaco. Jaderna energie
6 no.4:130 Ap '60.

BERANEK, J.

Decontamination of equipment in Saclay. Jaderna energie 6 no.5:
175-176 My '60.

BERANEK, J.

Survey of uranium production. Jaderna energie 6 no.6:205-
206 Je '60.

BERANEK, J.

Uranium ore processing in Spain. Jaderna energie 6 no.6:206-
208 Je '60.

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"Dosimetry and radiation protection" by R.G.Jaeger. Reviewed
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BERANEK, J.

Construction of heavy water reactors in Canada. Jaderna energie
6 no.10:355-357 0 '60.

BERANEK, J.

Nuclear research center in Grenoble. Jaderna energie 6 no.11:
388-389 N '60.

ZEMLICKA, J.; BERANEK, J.; SMRT, J.

Preparation and methanolysis of uridine, 6-azauridine and
6-azacytidine O-formyl derivatives. Coll Cz Chem 27 no.12:
2784-2795. D '62.

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BERANEK, J.; SORM, F.

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Coll Cz Chem 28 no.2:469-480 F '63.

1. Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague.

CZECHOSLOVAKIA

BERANEK, Jaromir, MVDr

Brno

Brno, Veterinarstvi, No 12, December 1966, pp 547-549

"Absorption, excretion and toxicity of ethoxyquine, an effective stabilizer of oxidable components of forage."